

IN THE CLAIMS:

1. A valve connector for coupling with inflation valves of vehicle tyres, comprising
 - a housing,
 - within the housing a coupling hole for coupling with an inflation valve, the coupling hole having a central axis and an outer opening,
 - positioning means for positioning the inflation valve when coupled in the coupling hole, and - an activating pin, which is arranged coaxially with the coupling hole, for depressing a central spring-force operated core pin of the inflation valve,
 - a cylinder having a cylinder wall provided with a pressure port which is connected to a pressure source, wherein
 - the activating pin is shiftable between a proximal pin position and a distal pin position relative to the positioning means so as to depress the core pin of the inflation valve in its distal pin position and disengage the core pin of the inflation valve in its proximal pin position when the inflation valve is positioned by the positioning means,
 - the activating pin is coupled with a piston and the piston is slidably arranged in the cylinder and is movable between a proximal piston position, which corresponds to the proximal pin position, and a distal piston position, which corresponds to the distal pin position, characterized by the fact that
 - the piston is disposed in the cylinder between the pressure port and the coupling hole and is drivable from its proximal piston position to its distal piston position by the pressure supplied into the cylinder from the pressure source, and
 - that flow regulating means are provided for selectively interrupting or freeing a flow path between the pressure source and the coupling hole depending on the piston positions and are adapted such that the flow path is interrupted in the proximal piston position and the flow path is freed in the distal piston position at least when the inflation valve is positioned by the positioning means.

2. Valve connector according to claim 1, characterized by the fact that the flow regulating means are further adapted such that the flow path is interrupted between said

proximal and distal piston positions in third piston positions which correspond to intermediate pin positions in which the core pin is engaged by said activating pin.

3. Valve connector according to claim 1, characterized by the fact that
- said flow regulating means comprise sealing means and said sealing means comprise means for sealing the edge of said piston against the wall of said cylinder when the piston is in its proximal piston position respectively in its proximal and third piston positions.

4. Valve connector according to claim 3, characterized by the fact that the piston is movable further beyond said proximal piston position into a fourth piston position in which the piston is farther away from the outer opening of the coupling hole than in the proximal piston position and the wall of said cylinder comprises channeling means for enabling the conduction of compressed air past the edge of said piston when said piston is in its fourth piston position.

5. Valve connector according to claim 3 characterized by the fact that the housing comprises piston control means for guiding the movement of said piston and of the activating pin in the direction of the central axis of the coupling hole.

6. Valve connector according to claim 3, characterized by the fact that the housing comprises said cylinder wall for guiding the movement of said piston and the activating pin in the direction of the central axis of the coupling hole.

7. Valve connector according to claim 5, characterized by the fact that said sealing means comprise means for sealing the outer surface of the activating pin against the surface of said piston control means.

8. Valve connector according to claim 4, characterized by the fact that the activating pin comprises duct means for enabling the conduction of compressed air past

the activating pin between the activating pin and the piston control means when said piston is in its fourth piston position.

9. Valve connector according to claim 3, characterized by the fact that the activating pin is coupled with the piston through a piston rod and said flow path comprises a channel through the piston and piston rod that connects the cylinder to an orifice on the surface of said piston rod, wherein the mutual positioning of said orifice and said sealing means is such that

- said orifice is closer to the coupling hole than said sealing means when said piston is in its distal piston position thereby freeing the flow path through said channel between said cylinder and the coupling hole when said piston is in said distal piston position and
- said sealing means are closer to the coupling hole than said orifice when said piston is in its proximal piston position thereby interrupting said flow path through said channel between said cylinder and the coupling hole when said piston is in said distal piston position and in said third piston positions.

10. Valve connector according to claim 1, characterized by the fact that the flow regulating means comprises a valve element mounted centrally within said piston and being axially movable in relation to said piston between a closed valve position and an open valve position.

11. Valve connector according to claim 10, characterized by the fact that said valve element is pulled by an extension spring towards said closed valve position and comprises a valve lever extending eccentrically through said piston for pushing said valve element towards said open valve position when said piston is in said distal position.

12. Valve connector according to claim 10, characterized by the fact that the activating pin is coupled with the piston through a piston rod and said valve element comprises

- a central pin extending concentrically through said piston and piston rod and
- a compression spring for pushing said valve element towards said closed valve position.

13. Valve connector according to claim 1, where the housing has one coupling hole and within the coupling hole inflation valve sealing means for sealing the valve connector onto inflation valves of various types and/or sizes, characterized by the fact that

- said coupling hole includes at least two coupling hole sections which are axially displaced from each other and have different diameters, with the larger diameter coupling hole section closer to said outer opening than the smaller diameter hole section, and
- said inflation valve sealing means comprise a first sealing portion and a second sealing portion situated coaxially with the center axis of the coupling hole at different levels along the center axis, with said first sealing portion disposed at and assigned to the larger coupling hole section and said second sealing portion disposed at and assigned to the smaller coupling hole section.

14. Valve connector according to claim 13 characterized by the fact that it comprises

- a lever arm that is movable between a rest position and an activation position (83), and
- within the coupling hole a deformable bushing;

wherein said deformable bushing is arranged to be influenced by the movement of said lever arm so that it becomes deformed when said lever arm is in said activation position and not deformed when said lever arm is in said rest position, the deformed state corresponding to the formation of temporary securing thread onto the surface of said deformable bushing when the inflation valve is coupled in the coupling hole.

15. A pump for human-powered operation by hand or foot for inflating a vehicle tyre, characterized by the fact that it comprises attached thereto a valve connector according to claim 1.

16. The use of a valve connector according to claim 1 for inflating a vehicle tyre with a pump for human-powered operation by hand or foot as said pressure source which is connected to the housing.